

Arriemon, I.

August 25, 1958

Cerro Campana and BCT

~~Arremon~~ = aurantirostris = Orange-billed Sparrow

I caught 2 of these finches here, probably a mated pair. Banded right red and right yellow, and let loose in outside cage on the island. Very shy.

Their WF's and TF's (with Inn) seem to be quite the same as those of the Green-backed Sparrow.

The only sounds I have heard them utter are very sharp loud CN's. Single but frequently repeated. Might be transcribed as "Tut". Apparently all CN's.

Arriemon, I.

October 25, 1958

Brown Zoo

~~Arremon~~ = schlegeli = Schlegel's Finch

There is a single bird here (♂?) in a large cage with many (mostly smaller) other finches.

General proportions & movements much like those of the Orange-bill, but the bird is smaller & much more lightly built.

Has a "Tut" CN quite like that of the Orange-bill. Always essentially single, but frequently repeated.

Has also uttered quite a lot of what appears to be "song". A series of notes essentially like CN's, followed by a slight flourish (and frequently a partial repetition). The initial series of notes is not very long. 5 is the usual number, I think. Each of these initial notes might be transcribed as "Tuh" or "Touh". The flourish is

Arremon, Oct. 23, 1958, II.

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might be transcribed as "Isceeee" or "Isuh-eeeeeee". The whole thing might be represented by the following diagrams:

----- or -----

With repetition:

(Hearing more of these songs now, I think that the initial series of notes usually includes 6 rather than 5 notes. In any case, there is considerable variation.)

Now this bird has uttered a lot of phrases with a single note like the initial notes following the flourish.

The bill opens & closes with each note

Arremon, I

July 20, 1959

Porto Bello

I disturbed an Orange-bill here today. In very thick underbrush of (probably) second-growth rain-forest, on the banks of a small stream. The bird flew up, landed on a small branch stretching across the stream. Uttered a lot of ACN's like those described above. All single. Each CN accompanied by a single WF and a single TF. Occasionally interspersed by brief phrases of what appeared to be "warbling" song. I couldn't hear these song phrases very well — as they were quite soft and there was a lot of background noise — but they were somehow reminiscent of the songs of the Chestnut-capped Atlapetes in tonal quality. One phrase which I heard a little better than the others may have been composed of five soft "Dee" Notes, one right after the other. These song phrases

Anemon, July 20, 1959, I.

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were not accompanied by any obviously ritualized postures or movements, but each note was accompanied by opening & closing of the bill. It is my impression that the bird seldom or never performed much in the way of WF's or TF's during the utterance of these song phrases.

After a minute or so of uninterrupted ALCN's and "warbling" songs, the bird just flew away and did not return while I remained.

Anemon, I.

April 5, 1960

Barro Colorado

I have had another pair of Orange-bills for some time now. I bought them in the market at the same time, and presume they are a mated ♂ and ♀ (one of them has a brighter bill than the other). Unbanded. This afternoon I finally got around to letting this new pair into a large outside cage adjoining the cage of the old pair. (I shall call the new pair "N", and the old pair "O".)

As would be expected, the N birds seemed alarmed when they were first put into their new cage, and one of the O birds (presumably the ♂) appeared to be considerably irritated by the sudden appearance of the newcomers.

One bird of the N pair (presumably the ♀) stayed on or near the ground, on the side of the cage farthest away from the O birds, throughout the whole period I watched the birds. Remained quite silent throughout.

One bird of the O pair (presumably the ♀ also) also remained quite silent, and tended to remain rather low in the shrubbery, (although she did fly up and around from time to time).

Arremon, Apr 5, 1960, II.

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These reactions would suggest that ♀'s are much less aggressive than ♂'s (see below).

The tendency to remain low is probably a good indication of a relatively strong escape drive. Frightened birds of this species tend to go down into low vegetation and run along the ground more than any other species with which I am familiar. (I noticed this during very casual observations of both the O & N pairs long ago. This afternoon, when we started to catch the N birds in the aviary, where they had been living for months — the "holding aviary" — they tried to escape by flying at first but they went down and started to run long before any of the other birds in the aviary at the time — even before the Green-backed Sparrows and Rose-breasted Thrush Tanagers.)

It was only the presumed ♂'s who displayed this afternoon after the N pair were put in their new home. (I shall just call these 2 birds "the ♂'s" to avoid confusion from now on.) The interesting thing is that they displayed in quite different ways.

The N ♂ spent most of his time hopping and/or flying from bush to bush on the side of the aviary away from the O birds. During most of this time he showed definite extreme CR.



Notice shape of crest.

Peak in front.

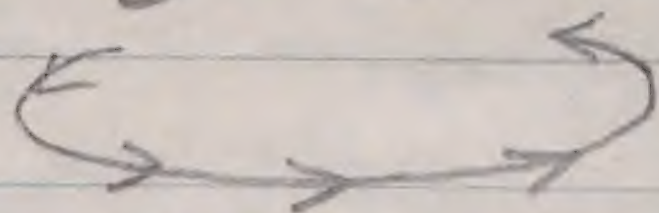
Gray median stripe either very inconspicuous or invisible (although the gray feathers are certainly erected as much as the black ones).

The N ♂ also performed lots of WF's and TF's during the periods he was moving around with CR. I noticed that all or most of his TF's were

Memor, Apr 5, 1960, III

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slightly D-V, with a very strong lateral component (and usually or always Jmm)



The No σ remained quite silent throughout this whole performance. The fact that he did not utter CN's, in spite of the fact that his escape drive was obviously relatively stronger than that of the O σ who did utter many CN's (see below), would indicate that the CN's of this species are definitely not alarm patterns (my previous designation of these notes as "alCN's" is obviously wrong).

The No σ did perform gaping from time to time. Much of his gaping during the first few minutes after the N pair were introduced into their new cage may have been "panting" (as we had to chase them a long time in their old cage before catching them), but I noticed that he did tend to open his bill slightly from time to time, much later, when the O σ gave a particularly loud and/or rapid burst of song phrases (see below). This would suggest that the species does have some sort of ritualized G-pattern, but that it is not particularly aggressive. The No σ always had CR when he G'd, but he also did CR many times without G.

His CR was definitely correlated with the CN's and songs of the O σ . When the O σ was silent, the No σ usually gradually lowered the crown feathers, until the crown was quite flat; but he always raised them again as soon as the O σ became vocal again.

The behavior of the O σ was much more elaborate than that of the No σ . The O σ was obviously quite aggressive. He spent most of his time flying and hopping about on the side of his cage nearest to the N birds.

He uttered lots and lots of CN's during this performance. Even

Annex, Apr. 3, 1960, IV.

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thly as described before. He didn't utter them constantly, as ever, once in a while he would relax temporarily, sitting more or less placidly and falling silently, but he always uttered CN's when he was moving about excitedly as near to the N's as he could get. Another indication that the attack drive must be appreciably strong when CN's are uttered. The bill is opened and shut quite conspicuously when CN's are uttered.

The O's CN's were intermingled with many song phrases. These songs were much like the ones described above on July 20, 1959, p. 2, insofar as they were very reminiscent of Atlapetes, but today I noticed that they could be divided into two types which were partly distinct from one another.

One type might be called the "Trill song" ("Trill S"). It seemed to consist of a very rapid repetition of essentially identical notes
mmmmmm

The other type might be called the "Twittering song". It was somewhat more melodious than the Trill S (I shall abbreviate it as "Mel S"), but by no means really pretty. It might best be described as a rapid twittering warble. Quite formless in general effect. Many or all Mel S's, however, seemed to be largely or completely based upon repeated doublets or (more frequently) triplets. "tuh toooo" or "tuh tuh toooo" (Probably, in some cases, the "tooos" were preceded by more than 2 "tuh"s, but I am not sure about this.)

Both types of song were essentially similar in tonal quality. Relatively soft and "tinny".

The only notes of the songs which were even moderately loud were some of the "tooos".

Many of the song phrases uttered by the O's were really combinations of the Trill and Mel types, including both trills and doublets.

Anemon, Apr. 5, 1960, V.

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et and/or triplet "tuh toooo"s.

A fairly typical example of one of these intermediate song phrases, preceded by CN's (as all the song phrases were), might be represented as follows:

— — — — —
CN CN CN Mel S Trill

(This sort of arrangement did not appear to be very standardized. I am fairly certain that Trill's occurred before the Mel part during some song phrases, and that either the Trill and/or the Mel parts were sometimes repeated at least once.)

It is quite possible that the triplets which appear to be the basis of the Mel S's and the Mel parts of combined Trill-Mel S's are strictly homologous with the NNN's of the songs of Chlorospingus spp. (If necessary, I shall use the same abbreviation for them.)

(It might be worth stressing that the single notes which are repeated in the Trill are much softer than the CN's — although they may conceivably be essentially identical with the "tuh"s of the NNN's. These notes of the Trill are quite reminiscent of the softest CN's of a variety of other species, but they are very different from the CN's of this species.)

The bill was definitely opened & closed with each note of many or all songs (I am sure with each note of the Mel S's, but still uncertain about the Trill S's). It was not, however, opened widely with most notes. It was only opened widely with the loudest "tooos" of some NNN's.

It was difficult to tell if the O O was performing CR at any time this afternoon. He seems to have managed to get most of his crown feathers rubbed off in some way. But he did have a few little stubs stuck

ing up all or almost all the times he was uttering CN's and songs, and so he may have had CR all these times.

He certainly performed lots of WF's and TF's almost all the times he was uttering CN's & songs. I did not notice any decrease of flicking when he was singing.

When the N pair were first put into their new cage, the O♂ flew toward them immediately. He uttered CN's immediately, but did not begin to sing until a few seconds (minutes?) later. His first 4 or 7 song phrases were largely or completely Fill S's. Then he started to utter song phrases which were largely or completely Mel S's. He continued to give songs off and on for at least an hour. In bursts. Six or seven songs within a minute or so, as he flew excitedly as near to the N's as he could get, and then a few minutes of sitting quietly. Most of these later songs were also largely or completely Mel S's.

The only songs uttered by the O♂ during later periods which were largely or completely Fill S's were correlated with redirection attacks. Sometimes when the O♂ was hopping or flying about near the N's with lots of CN's & Mel S's, the O♀ would come more or less close to the O♂. He was then very likely to turn around and supplant the ♀ very rapidly several times in succession. Obviously supplanting attacks. Most of these attacks were accompanied by lots of CN's and song phrases, and many song phrases in such circumstances were largely or completely Fill S's.

These incidents would suggest that Fill S's are either more aggressive and/or higher intensity than Mel S's.

Both types of song were definitely correlated with CN's. There were no songs which were not associated with CN's. CN's usually occurred both before and after every song phrase. But CN's also

Memorandum, Apr. 5, 1960, VII.

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occurred not infrequently by themselves alone, without song phrases. This would suggest that the CN's may be lower intensity than the song phrases.

All in all, the whole of the display behavior shown by these birds today was very reminiscent of Atlapetes. Quite different from the display behavior of Anemonops.

Memorandum, I

May 4, 1961

Barro Colorado

I separated the ♂'s & ♀'s of both the N and O pairs some time ago (at least 3 months ago). I took the 2 birds which I thought were ♂'s and put them together in the same cage, leaving the 2 birds which I thought were ♀'s in their old cages (separate). Then yesterday I put the N ♂ (banded red) in the cage with the O ♀ (unbanded). (Unfortunately, the O ♂ died a few weeks after being separated from the ♀.)

The N ♂ had been singing, in the early mornings, while it was by itself. High thin "formless" warbles, which I did not have time to study. But I rather imagined that it must be coming into breeding condition. I hoped to see some interesting reactions when I put it in with the ♀.

This hope was not really fulfilled.

When the ♂ was first introduced, both birds uttered a few "Tut" CN's and hopped about the cage moderately rapidly. The O ♀ also did a little silent CR. Then both birds appeared to calm down, but kept well apart from one another.

After being together for a few minutes, one or both birds ut

Ammon, May 4, 1961, II

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ered a few single "Isawee" Notes. Plaintive in tone. These notes reminded me very much of the SN's of Tangara and Thraupis, and the PCN's of the Savanna de Toro. I imagine they were homologous with all these latter. As far as I could tell, they were not accompanied by any special ritualized postures or movements (or any opening & closing of the bill).

I think I shall call these plaintive "Isawee" Notes of the Orange-bell "SN" also.

A few minutes later, the N♂ began to utter song phrases. Obviously the type I called "Mel S" before. Each phrase might be transcribed by something like "Trit ta-sa-weee". (The first note of each phrase was probably nothing more than an ordinary CN.) Uttered from a perfectly unritualized-looking perching or pre-locomotor posture. I couldn't tell if the bill opened and closed with the notes or not. The N♂ continued to utter these Mel S phrases, at irregular intervals, but they didn't seem to provoke any sort of response from either the O♀ or the N♀ (in the adjacent cage.)

After a few more minutes, the O♀ began to fly about a little more actively than she had before, and occasionally came quite close to the ♂. At such times he uttered song phrases which were slightly different from the ones he uttered a few minutes earlier. More or less comme ça:

"Trit ta-ta-sa-weee." or "Ta-ta-ta-ta-ta-sa-weee".
The "ta-ta-ta-ta" component appeared to be a form of R (presumably the same thing that I called "Till" before). As far as I could tell, these Mel S's + R component were not accompanied by any special ritualized postures or movements. Nor did they provoke any more response than the previous Mel S's alone from the O♀. Still, I think that they must have been (more strongly) hostile (than the ordinary Mel S's without R).

Alumou, May 4, 1961, III

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Both types of song phrases tended to be uttered in doublets, 2 phrases, one right after the other, followed by a pause, and then 2 phrases more, etc. etc. But there were some exceptions, i.e. single phrases.

I shouldn't be surprised if the terminal "sa-weee"s or "ta-sa-weee"s of these songs were homologous with, or closely related to, the single SW's. If so, then these Mel S's are very closely comparable to the WS's of Palm and Blue Tanagers.

This morning, I went down to watch the birds slightly before dawn.

The N^o 1 began to utter song phrases well before it was completely light. These phrases were similar to the Mel S's he uttered yesterday, but even more twittering and formless. (I think that these formless, twittering, Mel S's were the same as the ones he used to utter in the mornings when he was in a cage by himself.) Some or all of these songs this morning might be transcribed by something like "Tuh-tuh-tuh ta-sweee tuh-tuh-tuh ta-sweee". Rapid and "tinkling". Usually in doublets.



? Bill
open ?

Pre-locomotory Posture
accompanying early morning
Mel S's

Ammon, July 4, 1961, IV

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The N♂ was not close to the O♀ when he uttered these songs (usually, in fact, he was right at the opposite end of the cage). The ♀ made no response either. I.E. these songs are certainly not "greetings".

It was difficult to see the N♂ clearly while he uttered these songs (due to the half light), but I was able to see that he was usually, or always, fairly high in the shrubbery in the cage. Either perched in an ordinary sitting posture or, more frequently (perhaps always?), in a "pre-Coccyzian" posture such as the one shown on the preceding page. He tended to fly from perch to perch, or hop along a perch, between bursts of song.

The ♂ stopped these songs by the time it was fully light.

About 6:45, I took him out of the O♀'s cage, and put him in the cage with the N♀, next door. But then none of the birds did anything at all!

The variability of the songs of this species is probably a good indication of relationship to *Actopetes* & *Pulliopterus*. So is the incorporation of R components in the song.

Ammon, I.

June 6, 1961
Barro Colorado

I left the birds as they were after the incidents described above. Then, on June 4, Rivera found that the O♀, all by herself, had managed to build a nest and lay 2 eggs!!! I immediately collected the eggs.

Put the old ♀ in with the N pair this afternoon 4:10 p.m.
No reaction at first. O♀ hops along ground. N birds just sit on perches, waltzing her, performing occasional flicking movements.

Memorandum, June 2, 1961, II

(13)

Then a vigorous fight develops. On the ground. Involves the 2 females. Lots of actual attacking. Back and forth. All quite silent. No display. Except CR by at least one of the disputing ♀'s.

Then the rain came down and I left.

Back 4:45 N birds and O♀ separated again. All quite silent and inactive.

There is a large troop of Spider Monkeys and White faces very near the cage now. I think the birds may be frightened of the monkeys. Setting absolutely frozen.

Then the N birds start to move around a little 4:55. The N♂ then preens quietly, erecting his head feathers in extreme CR. (Before this the head feathers had been smoothed as flat as possible. Still all birds quite silent. N♂ continues to sit with CR. (At least, I think this is N♂. I can't be absolutely sure. It is certainly one of the N birds.)

Memorandum, I

June 26, 1961

Barro Colorado

I left the 3 birds together after June 6. Changed the banding. One of the N birds is now banded green.

We moved the nest from the old cage of the O♀ into the new cage with all 3 birds. During the last few days, this nest has been moved and reconstructed by one or more of the birds.

Down by cage 5:45 a.m.

Still very dark. Birds quite silent.

One bird finally utters a few CN's at 6:00 a.m.

This species certainly does not become active as early as the Green

Ammon, Jun. 26, 1961, II

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✓ Backed Sparrows!

Birds busily hopping around on ground, feeding, now (6:10).
Silent except for an occasional single, plaintive (rather hoarse?) "Whew"
Note. Is this an SN pattern? It is still too dark to see if such notes
are accompanied by special movements or postures.

Now hopping about with both "Whew" notes and ordinary CN's
6:20. Birds not usually together

One of the birds is now hopping around uttering CN - "tuh-tuh"
CN - "tuh-tuh" The notes after the CN's are much softer than the CN's.
They sound rather as if they might be low intensity indications of a tail or rattle.
This bird was hopping near the others while it uttered these calls. But it did
not seem to be reacting to them in any other way.

Apparently nothing at all going on now, 6:45. Birds still feeding.
Uttering nothing but ordinary CN's.

Then one of the birds utters a couple more "Whew" notes. It seemed
to be uttering these notes as it hopped along the ground, when it got near another
or bird (also hopping along the ground). I noticed that these notes were really
quite hoarse and rather nasal!! Perhaps these notes are HAC or GHAC??

Leaving myself 7:00 a.m.

✓ (From my observations today, I think that the green banded bird
is probably the No. 1)

Ammon, I

July 2, 1961
Barro Colorado

✓ Bora says that he found 1 egg in the nest of these captive Orange
ge-bills early yesterday morning, and then a second later in the morning.

Memor July 2, 1961, II

(5)

Arrive at cage to watch birds 5:33 a.m. this morning. Quite silent.

Single CN's start 5:38. Also 1 Mel S. Too dark to see birds. Then more CN's, Mel S's, & 1 "Whew" note.

Mel S phrases =

"Ja-ta-whewee ta-whewee ta ta-whewee" or

"Ja-ta-whewee ta ta-whewee ta ta-whewee"

Continuing "Tut"s & Mel S's 6:03 still too dark to see

Now 6:04 possible to see birds. Mel S's and all or most CN's uttered by same bird. When somewhat isolated. On ground as well as when perched. Uttered from all sorts of loco and pre-loco postures. Alternated with lots of WF's and TF's. TF's with tail fanned. No CR. Yellow canary visible during songs.

Now 6:13, bird sits more or less placidly on perch, uttering Mel S after Mel S. Alternated with comfort activities. At the same time, I hear an occasional "Whew" note in background. These are definitely not uttered by the singing bird. Probably by another bird flying around cage quite excitedly.

See or no "Tut" CN's now 6:20

Birds start lots of "Tut"s, stop all other calls, when Boca goes on to get food. I presume "Tut"s must be Al CN's!

All completely silent after Boca leaves. Still about 6:33

Then bird starts to utter Mel S's again. This is the green-banded bird. Mel S's alternated with WF's & TF's. Bird alone. Then flies down to feed on ground near other bird. Stops Mel S's.

Mel S's definitely do not seem to be hostile!

Now bird back, uttering Mel S's while perched. Mel S's alternated with both flicking and comfort activities 6:45.

Ammon, July 2, 1961, III

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Bill definitely opens & closes with each note of "Hill's" phrases.

During almost the whole of this morning, one of the birds has been incubating steadily. This is the unbanded bird (the one I called "O" ♀ before). The green-banded bird is presumably mated to the incubating bird. This green-banded bird is presumably "N" ♂. The third bird, still banded red, is presumably "N" ♀. She has spent most of the morning flying around the cage quite actively and nervously. She seems to be much more nervous than the green-banded bird.

Ammon, I

February 10, 1962
Santa Fe

The captive birds managed to hatch a pair of young last year (see above), but the young were taken by a snake. I did not watch the behavior of the captive birds again.

Looking over my notes of last year (after having written the first 3 of my descriptive papers on tanagers and finches), I think that I should give new names to some of the displays of the species and add some comments about some of the displays.

I shall call "Hill's" "Wbl" from now on.

I shall call "Hill's" just plain "Hll" from now on.

I shall call "SN"s (whatever they may be in this species)

"PN"s from now on.

The notes I have been calling "ALCN's" or "CN's" are obviously Short Hostile Notes. I shall call them "SHN's" from now on.

(Cont'd next page)

Arenson, Feb. 19, 1967, II

(17)

This morning, I went for a walk above Santa Fe. Found a lot of Orange-bills in and along the sides of a patch of apparently virgin montane forest, probably approximately 1500 ft. above the town. More Orange-bills than I have ever seen before. This is really one of the most strongly dominant species of the area.

7:00 a.m. I found one bird. Sits in nearby bush, uttering many, single, loud and hard SHN's. Many of these notes could be transcribed as "Tuck" as well as, or instead of, "Tut". The bird performed many extreme WF's while it sat uttering these notes. (Probably also performed TF's, but I couldn't see them.) These notes are definitely not accompanied by CR.

There actually seem to be 4 birds in this particular restricted area. Probably two pairs. Suddenly they all come close together and become very active and vocal. (I imagine that a bird of one pair must have strayed into the territory of the other pair, due to the confusion and excitement aroused by my appearance.) Lots and lots of SHN's and Tills. All Tills preceded by SHN's. A typical Till might be represented as follows:

"Isreeeeeeeeeee ta ta ta ta ta"
~~~~~ ^ ^ ^ ^

Beginning very fast. Slowing down. The last notes seem to be nothing more than "detached" syllables or "rolls" of the Till. All or most Tills seem to be high pitched and then at the beginning. Lower pitched toward the end. Possibly commencing.



Arenson, Feb. 10, 1962, III

(18)

These Tll's were accompanied by quite a lot of chasing back and forth. Obviously hostile. I couldn't see if they were accompanied by special ritualized gestures or movements. (Actually, I never saw a bird clearly at the exact instant it was uttering Tll's. But the Tll's were certainly being uttered by these particular birds.)

These SHN-Tll sequences were quite reminiscent of the Bush tanager's in sound. Especially "Tuck" Note - ER sequences by BC BT's.

7:15 a.m. Flushed another pair of Orange-bills. Both hopped about in bushes uttering lots of single SHN's. One bird also utters several Tll's. Quite as described above, but shorter. No chasing.

7:30 a.m. Flushed still another Orange-bill. Apparently single. Utters lots of SHN's. With slight CR at first; but the CR disappears as the bird comes closer to me and/or as the intensity of its reaction declines. Also with occasional WF's (sometimes extreme, sometimes not), and many extreme TF's. These TF's were primarily lateral, and D-V, like the TF's of my captive birds. The tail was also jerked straight down, a little bit, with each note.

7:40 a.m. Flushed another single Orange-bill. Hopped about uttering SHN's as usual. With extreme WF's and TF's. Also very slight CR and definite Thflff. Thflff quite conspicuous, although the feathers of the throat of this species are not as long as those of Atlapetes spp.

8:15 a.m. Flushed another single Orange-bill. Uttered SHN's with Thflff, WF's, and TF's. No CR.



Ammon, Feb 10, 1962, II

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Thiff without CR  
In erect posture

8:30 a.m. Flush another single bird. This bird is not greatly upset. Acts quite relaxed, with head drawn in, resting on shoulder. Utters SHN's, without CR, Thiff or flushing movements. These SHN's obviously produced by very weak motivation. So the range of motivation producing SHN's in this species is probably very great.

I think all the TF's I saw this morning were accompanied by more or less pronounced Inn.

Ammon, I

February 11, 1962  
Santa Fe.

I went up to the area where the Orange-bills were again early this morning. Arrived 6:35. Already light, but sun not up over the mountains yet. Cloudy.

There was no trace of Dawn calling in the area. All I heard were a few SHN's and (probably) some Wbl's in the distance.



Anemon, I

March 24, 1962  
Rio Piedras

8:00 a.m. Come across a pair of Orange-bills in same area where I have watched Mitros on previous days. In same forest undergrowth. Both birds obviously aware of me. One utters lots of SAN's and a few Wbl's. Without CR. At the time it uttered its Wbl's it was at least several feet away from its mate.

Both the SAN's and Wbl's of this species are very reminiscent of the corresponding patterns of the Mitros in sound. This may be an indication of relationship. More probably due to convergence, correlated with the fact that the 2 species live in similar environments. (The Wbl's of the 2 species may not be strictly homologous — or, at least, may be produced by different motivation.)

Anemon, I

May 6, 1962  
Barro Colorado

Watching my capture pair 5:50 a.m. Not working from blind. One bird becomes vocal 5:54. At first utters jumble series of SAN's and Wbl's. Wbl's very soft. Then just utters series of Wbl's. Wbl's gradually becoming somewhat louder. 6:02 Bird falls silent. Still difficult to see properly. Just Wbl phrases quite long & complex. Bird resumes Wbl's, as before, 6:04 a.m. One phrase like "Tee-ta-zee ta-zee-wee"



Memor., May 6, 1962, II

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Birds fall silent when Alvarez approaches.

Then more Wbl's. Some "Za whee za whee za whee-uh"  
Some "Za-whee za-whee za-whee." All "tinkling", but not too  
soft.

Then silence again 6:10 a.m.

One of the birds then utters plaintive "Wheew" Note, followed  
immediately by more Wbl's.

"Wheew" must be PN, I think.

All or most of these vocal patterns seem to be uttered by bird  
Cov in vegetation. Hidden from me.

More Wbl's 6:13 a.m. Much as before, but not composed  
of quite as regular doublets.

Then back to more regular Wbl's. All these Wbl's apparent-  
ly uttered by bird while perched, very momentarily, between flights.  
Bird usually moving around cage very rapidly. (This species doesn't  
seem to sit perched on a "station" for long periods of time while "sing-  
ing".)

Another case of a Wbl introduced by a PN. 6:20. Again!  
Then lots more Wbl's without PN introduction.

This time I get a good view of the singing bird. It sometimes  
perches for several seconds, uttering several Wbl's in a row, before fly-  
ing off. Wbl's uttered from perfectly unritualized looking posture. Not  
very upright. Without any trace of either CR or Hflff. Bill opens and  
closes with the notes.

One Wbl "Ja ta-zee-wuh ta-ta-zee-wuh"

This division of a "single" Wbl (or single Wbl phrase) into  
two essentially identical phrases or sub-phrases seems to be quite a comm.



Memor, May 9, 1962, III.

(22)

or arrangement. But not invariable. Some Wbl's include only brief single phrase or sub-phrase. Others are long, but not obviously divided into major sub-phrases.

One more Wbl introduced by SN 6:28. Then a lot more without SN's. Many of these phrases uttered by bird on ground, in outcrops of feeding. Again from perfectly unritualized postures. No CR or Hflff.

6:35 Bird now sitting very quietly and peacefully on perch for long period of time (over a minute) uttering Wbl after Wbl, at more or less regular (and relatively long) intervals. None of the Wbl's bipartite. Vary from "Za-weeee za-weeee za-weeee" to "Za-weeee za-weeee za-weeee-uh-wee". Again no CR or Hflff. Bird looks from side to side occasionally between Wbl's.

Silent now, 6:40 a.m.

A few more Wbl's a few minutes later.

I am fairly certain that it is the green-banded bird who is doing all the singing. This is the bird with the brighter bill. Obviously not.

Again another Wbl introduced by PN, followed by a series of Wbl's without PN. So it seems that there is a tendency for PN's to be uttered at the beginning of a period of Wbl's, but not later in the period. PN may be an introductory "warm up" pattern. Produced by the same type of motivation as Wbl's, at a lower intensity ???

6:53 Green suddenly utters series of vocal patterns  
1 SHN - 1 PN - 1 Wbl    1 SHN - 1 Wbl    1 SHN - 1 PN - 1 Wbl    1 SHN - 1 Wbl  
1 SHN - 1 Wbl    1 SHN - 1 Wbl    1 SHN - 1 Wbl    Wbl    Wbl    Wbl  
Wbl ..... I don't know why this sudden outburst SHN's. Bird sitting on perch in unritualized posture throughout.



Ammon, May 6, 1962, IV

(23)



One common WBL  
posture

Looks large bodied  
some fluffing underparts

Yellow-caps almost hidden

There has certainly been nothing like a pre-cop attempt this morning. No conspicuous approaches of the ♂ to the ♀. The ♀ has been hidden from my sight most of the time.

Leaving 17:07

I checked the cage after leaving. No trace of a nest yet

Ammon, I

April 1, 1963  
Tarma, Peru

This morning saw several individuals of what was presumably an other species of Ammon. No ~~XXX~~ on list = ~~XXXX~~ =

About 6:30 a.m. saw a pair in Eucalyptus trees. Altitude 10,475 feet. Birds moving about in trees, approximately 10-20 ft above ground. One bird sings repeatedly while some distance from mate. Phrases "Isi-whit-tsee-whceee (or)"



Memorandum, Apr. 1, 1963, II.

(24)

The bird had definite CR during at least some of these phrases (but probably not all?).

A few minutes later, one or both birds uttered some sort of "grating" (GHAC?) when one joined the other.

April 2, 1963

Below Jaruma

Have seen several more of the local Orange-bells this afternoon. 3:35 p.m. 9000 ft. See 2 single Orange-bells (perhaps just separated members of single pair). Moving through low scrub and in nearby Eucalypts, 20 feet above ground. One of the birds repeatedly utters loud, clear, whistling calls. "Whit-whoooo"s and/or "Whoooo"s. At irregular intervals. While in scrub.

One of these birds was seen to have a dusky Crown-bell. Juvenile or just dirty? Unfortunately, I don't know if this was the bird that uttered the notes or not.

I heard similar notes coming from low scrub in area above Jaruma this morning, in the middle of the morning. Couldn't see bird; but this was the area where Orange-bells were seen yesterday.

These notes may be nothing more than low-intensity song.

Later in the afternoon, ca. 5:30, I saw one Orange-bell moving through low scrub at 8540 ft. Apparently silent.



Arremon, I

April 3, 1963  
Near Jaruma

Working above Jaruma this morning. From 10,700 to 11,375 feet. Saw quite a lot of local "Orange-bills" around, up to approximately 11,000 ft. In both low scrub and in Eucalypts. Usually single. Perhaps some of the birds seen were actually in pairs or family groups of three, but, if so, the members of the pair or group were always quite widely scattered.

I am beginning to think that this species may be a saltator. About exactly intermediate, in body shape, between typical saltators and typical Arremon & Arremonops-type sparrows in Panama. And bill is quite thick and heavy.

7:10 a.m. Ca. 10,800 ft. Some bird(s), probably "Orange-bills", cawed in trees near second pair of Bruns (see today's notes on *Muscivora diglossini*). And uttered repeated "Ja-wheweeet-wheweeet" phrases. Loud & whistled. Unfortunately I didn't see the bird(s) well, but the general tone of the calls was identical with that of (other) Orange-bill calls I have heard.

8:15 a.m. See a single Orange-bill perched on top of bush about 3 feet above ground. Utters series of "Ja-wheweeet-wheweeet" calls. Less loud and whistling than most calls of the species. Sitting in unritualized position. No CR. Head & bill pointed diagonally upward as each call is uttered. Then bird flies away. Left to right. But I hear loud, clear, and whistled "Ja-wheweeet-wheweeet"s in distance, a few seconds later, coming from direction in which bird flew. Also a few single "Wheweeet"s. All this happened at 10,925 ft.



Ammon, Apr 3, 1963, II.

(26)

It seems likely that this species has quite a variety of slightly different "song" patterns. And all of them are quite Saltator-like (especially like Black-cap.)

Ammon, I

April 6, 1963  
Mr. Jarman

Working below Paka this afternoon 8600-8800 ft. At foot of mountain where I have been studying Pect and Bruns. This is an area where there are lots of the local "Orange-bills." Crop fields and hedge-like stretches of scrub. Relatively few trees.

It is raining hard this afternoon.

4:15. A single Orange-bill perches on bush, exposed, about 3 feet above the ground, utters "Tee-whisset" (loud & clear) at regular intervals.

5:45. Rain stopped. See another single "Orange-bill" perched on top bush, exposed, 10 ft above ground. Utters "Whit-cha-whooooo"s.

Sometimes single, sometimes double. Quite verticalized posture. Presumably two vocal patterns. Once utters "Whit-cha-whooooo whit whit." Then flies off. Then perches on stalk of maize in field. Apparently utters repeated "Chit-chit chit-ta-wa"s. Then flies down out of sight. (Even this last call is quite Saltator-like.)







Мемор., Apr. 7, 1963, II.

(28)

7:00 a.m. Most of the song whistles heard now are 2 or 3 syllable. "Cha-whereeeee", "Whit-cha-whereeeeeee". Only a few full 4 syllable performances. Occasional monosyllabic whistles.

All their song whistles seem to be uttered by birds that are essentially "alone" (although they often have presumed mates 50 yards or more away).

These birds utter long whistles quite frequently. And their songs are certainly louder than those of any other local species.

But they certainly do not attract individuals of other species! I have seen no trace of any association of any sort between these birds and any other species.

I am fairly certain that mates answer one another by whistling back and forth across fields when separated. At least some birds certainly do - whether they are mates or rival males.

None of the birds I have seen singing today has had any trace of CR.

One bird is uttering alternate "Whit-~~chee~~soo"s and "Whit-~~chee~~soo-soo"s.

alternation very regularly, but at moderate  
by long intervals.

For the last half hour or so, ever since 7:00 a.m., approximately I have been hearing a lot of "chew chewee chew chewee chew chewee chew chewee . . . . ." Calls by 4 or 5 birds around here. Very difficult to see who is uttering them. At first I thought it might be the "Gray and Yellow" Finch. But now I think it is the Orange-bills. These notes are much softer and less whistle-like than the usual song whistles of the species. Very reminiscent of the DC of other species in total.



Memorandum, Apr. 17, 1943, III.

(29)

quality. Also apparently indeterminate in length.

If these notes are uttered by Orange-bills, they are obviously related to both the ordinary song whistles of the species and the DC of other species. Might be considered DC patterns in process of becoming assimilated into the "day song" patterns.

If these notes are being uttered by Orange-bills, it is remarkable that they are uttered by birds when they are fairly well hidden in shrubbery — not on exposed perches as when ordinary song whistles are uttered.

I think these notes are uttered by Orange-bills because I have seen Orange-bills fly out from shrubbery, from which the notes had been coming; and the notes stopped after the Orange-bills left. Also I have heard typical song whistles uttered in midst of a series of the softer notes — all apparently uttered by same bird(s).

One Orange-bill utters rather metallic "Tut" notes in flight. Then brief chatter — when landing by itself, at least 50 ft from another bird that may be its mate.

I have heard similar semi-metallic "Tut" notes uttered by other Orange-bills in flight. But they are not very common. Still they may be considered an index of Richmondian relationships.

7:42. One Orange-bill supplants another on perch. This supplanting accompanied by brief chatter.

Memorandum, I

April 13, 1943  
Nor Arico

"Orange-bills" have been common around here in almost all the



Anemon, Apr. 13, 1963, I.

(30)

areas I have visited, below the Puna itself.

I observed some interesting behaviors of "Orange-bills" this morning, below Hrubanaka. SEE TODAY'S NOTES ON MIXED DIGLOSSINI.

Then, 8:30 a.m., see two "Orange-bills" in Eucalypt. At least 20 ft above ground. Hopping about excitedly. One of the birds utters a lot of trill chatter. Then continue hopping about silently. Then one feeds the other. No pre or post display.

Anemon, I

April 24, 1963  
Barro Colorado

Yesterday I heard that one of my captive Orange-bills was singing very frequently. Wbl's. Later, I found the beginnings of a nest in the bottom of the Orange-bill cage.

Watching birds this morning 6:00 a.m. Still dark-ish. Observational conditions very bad.

One bird utters a few SHN's. No trace of song of any kind.

Then there is some aerial chasing back & forth. Then one bird perches alone. Utters Wbl's.

Then both birds fly back & forth. Only occasional Wbl's always by bird while separated from mate. Occasional single "PN"s.

Wbl's uttered from usual pre-locomotor postures.

♂ also runs on ground while feeding 6:25.

♀ seems to be ignoring him, or even avoiding him.

The "PN"s uttered today are rather nasal & hoarse "seeset"s or "Wheewt"s. Usually, I think, uttered when birds are hopping about on